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(54) **Machine with state display capability.**

(57) A complex machine, such as a mail-processing machine or postage meter, provided with one or more displays (e.g. 59-68) which mimic the machine configuration or the layout of print elements, with control switches (e.g. 101-105) located adjacent the displays in locations corresponding to the machine components or print elements that they respectively control. The displays are constantly on with indicators lit showing the current state of the machine or the expected printout. This greatly facilitates operation and control of the machine or meter even by unskilled operators.

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This invention relates to machines provided with a display of one or more of its states, and in particular to a postage meter or mailing machine incorporating a display indicating an operating state, condition or function.

While this invention relates generally to machines capable of assuming a plurality of states or conditions representing active or inactive operating functions or conditions, the invention will be described in connection with mailing machines for processing mail. This class of machine are frequently operated by users or operators with limited skills in an environment in which high speed processing of large quantities of mail pieces is necessary. One such machine is described in detail in commonly-assigned U.S. patent No. 4,935,078, and in the referenced copending applications, some of which have issued as U.S. patents, Nos. 4,924,804; 4,924,805; 4,930,764; 4,953,842; 4,955,483; 4,957,179; and 4,959,600. These patents describe various aspects of a mailing machine for high-speed processing of mixed mail, and characterized by a plurality of modules or stations for coordinated processing of mixed flapped or unflapped mail supplied at one end of the machine and ultimately discharged at the opposite end of the machine as sealed mail pieces imprinted with postage indicia and optionally other markings. As indicated in Table 1 in col. 6 of the '078 patent, the machine is capable of operating in a number of different modes controlled by a user. These modes are typically selected by a user activating switches on a control panel.

It is highly desirable that even an unskilled user can know for sure which operating mode the machine is in, and what functions it will perform in a particular selected mode. It must be remembered that these machines typically incorporate a postage meter representing monetary value. When the meter is activated to impress postage indicia on an envelope, monetary value is consumed. This cannot be undone. If the value indicia is wrong, the envelope may have to be discarded the monetary value will not be refunded. An error by a user of a high-speed mail processing machine can lead to considerable monetary loss.

The same problem applies to the imprinting of certain markings on certain envelopes. Again, incorrect printing on posted mail may result in loss of the batch.

Again, a similar problem arises if, for example, the machine is in a no-seal mode, and flapped or unsealed envelopes are processed, which means the sealer module is bypassed and flapped envelopes are passed on to the next module which may only be able to process sealed envelopes, causing the machine to jam.

There is thus a need in the art for providing to the user or operator of such machines immediate definite feedback of the state of the machine in a manner that allows even an unskilled user to quickly understand the current state of the machine, or what functions the machine will perform when the start button is pushed.

The invention aims to provide a machine capable of assuming a plurality of states or conditions and providing the means for informing an operator of the machine as to its current state.

An embodiment of the invention is a postage meter or mailing machine that will rapidly indicate to a user the current state of the machine or what functions it will perform when activated by the user.

According to one aspect of the invention, a machine has a control panel with switches operable by a user to cause the machine to assume one of a plurality of states, with the machine provided with a display which mimics the machine, and which display is provided with indications of one or more states of the machine. The term "mimic" is used to mean the display of a pictorial representation of the actual machine configuration in this case, or the display of a layout of the machine or of its output.

In a preferred embodiment in accordance with this aspect of the invention, the machine is a mailing machine for processing mail pieces, and the machine comprises a plurality of modules or stations, serially arranged, each adapted to carry out one or more mail processing functions. Furthermore, the machine is characterized by the capability of activating or bypassing or initiating one or more of the modules under the control of the user, and/or the capability of causing one or more of the modules to perform one or more functions. Thus, in accordance with the invention, the pictorial representation display depicts the various modules present in their approximate serial position within the actual machine, and the state or condition indicators for each module are located on the pictorial representation at positions adjacent where the module representation is located.

In a further preferred embodiment in accordance with this aspect of the invention, the user-actuable switches are located on the control panel at positions approximately aligned with the module on the pictorial representation whose state or condition or function is controlled by the associated switch. Thus, when a user activates a particular switch to implement a desired function, the user will instantly view on the pictorial representation the actual current condition or setting of each of the principal modules contained in the machine. Hence, any setting errors can be rapidly detected and corrected before the machine has begun its processing.

In accordance with another aspect of the invention, a malfunction or fault or machine need can also be deemed a state of the machine that can be displayed at the module involved in the pictorial representation. Thus, if a mail piece jams in the machine, an indicator in the pictorial representation will indicate in which module the mail piece is jammed. Similarly, if a module consumable such as water, ink or tape is about to be exhausted, an indicator can be activated at the module representation in the display where the consumable is located to indicate it requires replenishing.

In accordance with still another aspect of the invention, the machine comprises a postage meter which includes the feature that it not only prints postage indicia on a mail piece, but it also has additional printing means that, under control of a user, can print other markings, messages or information on the mail piece. In this implementation of the invention, the display mimics the print layout on the mail piece, so that the user can see at a glance what he or she can expect to have printed on the envelope. Similarly to one of the other preferred embodiments, the user-actuable switches on the front panel that select the printing are preferably approximately aligned with the location on the pictorial representation of the corresponding printing.

The invention will be better understood from the detailed description that follows of a preferred embodiment of one form of mailing machine in accordance with the invention, which is not to be considered limiting, considered in connection with the accompanying drawings.

Fig. 1 is a functional schematic of a mail-processing machine suitable for incorporating the present invention;

Fig. 2 is a perspective view of the actual mail-processing machine of Fig. 1 in accordance with the invention;

Fig. 3 is a plan view of the display of the machine of Fig. 2 for mimicing the machine configuration;

Fig. 4 is a plan view of the display of the machine of Fig. 2 for mimicing the print layout;

Figs. 5-9 are software flow charts illustrating various functions for controlling the current machine configuration;

Figs. 10-13 are software flow charts illustrating a preferred way for implementing the various printouts possible via the meter printing mechanism;

Fig. 14 is an interface block diagram illustrating the connections between a microcontroller, some of the keys on the control panel, and some of the indicator lights of the machine of Fig. 2.

The invention will be described in connection with the mail-processing machine described in U.S. Patent No. 4,935,078 whose entire contents are hereby incorporated by reference. A functional schematic is illustrated in Fig. 1. For completeness' sake, a brief description of the functions performed will now be described.

Referring now to Fig. 1, the preferred embodiment of a mail processing system according to the invention, generally indicated at 11, is comprised of a plurality of stations, preferably as modules, under the control and influence of a system controller, generally indicated at 13. The stations or individual modules are an envelope feeder module 15, a singulator module 17, a sealer module 19 which includes a sealer 21, and what is here referred to as an integrated module 23. The integrated module includes a meter module 27, an inker module 29, a tape module 31, a transport module 33 and a platen module 35. The integrated module is so referred to because the individual modules are mounted in a single housing. Each module includes the appropriate mechanism to perform a mail processing function.

Generally, the feeder module 15 receives an envelope stack 36 and, in the preferred embodiment, includes suitable mechanisms to shingle the bottom portion of the mail stack 36. The singulator 17 is charged with the function of extracting a bottommost envelope 38 in a seriatim manner and delivering the envelope 38 to the sealer transport module 19. The sealer transport 19 is charged with the function of traversing the envelope 38 across the sealer module 21. The sealer 21 has the capability of determining the sealing state of the envelope 38, and includes a diverter arm 40 for stripping open closed but unsealed envelope flaps, for responding to the seal state of an envelope such that only unsealed envelopes 38 are subject to sealing by the sealer module 21, and for detecting missealed envelopes. The sealer transport serves up the envelope 38 to the transport module 33 of the integrated module 23.

The integrated module 23 is comprised of a scale module 25, a meter module 27, an inker module 29, a tape module 31, a transport module 33 and a platen module 35. The mailing machine transport module 33 receives the envelope 38 from the feeder transport 19 and delivers the envelope to the scale 25. The scale module 25 is charged with the function of weighing the envelope 38 and reporting the approximate postage value as a function of its weight to the postage meter module 27 mounted to the integrated module 23. The indicia printing method employed in the preferred mailing system is referred to in the art as flat bed indicia printing. In accordance therewith, as the envelope 38 rests upon the scale, subsequent to being weighed, the postage meter module 27 print elements are set to the appropriate value as a function of envelope 38 weight. The inker module 29 is then charged with the function of inking the indicia of the meter module 27. Subsequent to inking of the postage meter module print elements, the platen module 35 is charged with the function of bringing the envelope 38 into printing contact with the print elements of the postage meter module 27. After the envelope 38 has been imprinted by the postage meter module 27, the transport module 33 resumes control over the envelope 38 and ejects the envelope 38 from the mailing machine 23. Optionally, a stacker (not shown) for the discharged envelopes can be provided. The tape module can be used to provide the meter imprints on tape, which is then adhered to the mail piece, instead of directly on the mail piece.

The postage meter can be of the type generally described in commonly-assigned U.S. patent No. 4,936,209 and equivalents, whose contents are also incorporated herein by reference, except that the display is adapted

to display the information in connection with the present invention.

Fig. 2 is a perspective view of the machine 11 from the front showing the control panel 39 and Figs. 3 and 4 are enlarged views of just the displays 40, 70 of the control panel 39 for mimicing the machine configuration and the print layout that will appear on the mail piece. In the Fig. 2 view, a stacker, if added, would be attached at the right-hand or discharge end of the machine.

Besides the mimicing displays 40, 70, the control panel 39 also includes an alphanumeric keyboard 90 for inputting postage value, text for advertisements (ads) and inscriptions, and other postal information, which is echoed in a separate display 91.

In this particular instance, the machine display 40 (Fig. 3) has 22 elements, each of which may be individually activated or deactivated. In general, the acuation of some elements is logically tied to the acuation of other elements. It employs five keys or button switches 101-105 associated with it which may be employed by the user to control various portions of the machine configuration.

Button 101 is used to control the feeder mode. Fig. 5 provides a software flow chart which illustrates the operation of this button. Button 102 is used to control the sealer mode. Fig. 6 provides a flow chart which illustrates the operation of this button. Button 103 is used to control the WOW mode. WOW stands or weigt-on-the-way scale. Fig. 7 provides a flow chart which illustrates the operation of this button. Button 104 is used to control the tape type. Fig. 8 provides a flow chart which illustrates the operation of this button. Button 105 is used to control the stacker mode when the stacker is present. Fig. 9 provides a flow chart which illustrates the operation of this button.

Display elements 41 and 42 are used to indicate the current feeder mode. These elements function as follows:

Feeder	Element	Element
Mode	41	42
Auto Mode	On	Off
Single Mode	Off	On

Auto mode means that a batch of mail is supplied in the hopper at the feeder 15. Single mode means that a single envelope will be processed.

Display elements 44, 45 and 46 are used to indicate the current sealer mode. These elements function as follows:

	Element	Element	Element
Sealer Mode	44	45	46
Seal On Mode	On	Off	Off
Seal Off Mode	Off	On	Off
Seal Only Mode	Off	Off	On

Display elements 47 and 48 are used to indicate the current WOW mode. These elements function as follows:

	Element	Element
	<u>WOW Mode</u>	<u>44</u> <u>48</u>
5	WOW On Mode	On      Off
	WOW Off Mode	Off      On
10	WOW Unavailable Mode	Off      Off

Display elements 49, 50 and 51 are used to indicate the current tape type. These elements function as follows:

	Element	Element	Element
	<u>Tape Type</u>	<u>49</u>	<u>50</u> <u>51</u>
	Gummed (Wet)	On	Off      Off
20	Gummed (Dry)	Off	On      Off
	Adhesive	Off	Off      On

The tapes are available for the meter printouts, which are then adhered to the mail piece.  
Display elements 53 and 54 are used to indicate current stacker mode. These elements function as follows:

	Element	Element
	<u>Stacker Mode</u>	<u>53</u> <u>54</u>
	Constant Mode	On      Off
	Auto Mode	Off      On
35	Power Stacker Not Installed	Off      Off

These display elements 41-54 are implemented as lights adjacent the labels on the display, for example, LEDs, which are turned on and off when the respective function is on or off. The display itself can be an outline drawing on a panel behind which the lights are installed, or an LCD display which offers the possibility of varying the pictorial representation in accordance with the actual machine configuration. The switches 101-105 are of the momentary type. Each press of the switch advances its module one step around a loop of its possible states. Thus, if only 2 states, on or off, are possible, then one press of the key will turn the function on if it were previously off. If on, a next press of the key will turn it off, and so on.

Display elements 49, 50, 51 and 52 are used to indicate the current water level in the system. These elements function as follows:

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	Usable	Element	Element	Element	Element
	<u>Water Level</u>	<u>49</u>	<u>50</u>	<u>51</u>	<u>52</u>
5	0	On	Off	Off	Off
	1% - 33%	Off	Off	Off	On
10	34% - 66%	Off	Off	On	On
	67% - 100%	Off	On	On	On

15 Note that the percentages above are approximate, and are dependent on the resolution of the water level sensor. The system also includes a capability for disabling the water level display. If the water level display is disabled, and no operation requiring moistening is currently underway, elements 50, 51 and 52 will all be off. If an operation requiring moistening is underway, elements 50, 51 and 52 will behave as per the above table. Element 49 operates as shown above at all times.

20 Display element 47 is used to indicate that the system is low on ink for the imprinting. This element operates in one of three ways:

		Element
	<u>Ink Status</u>	<u>47</u>
25	Ink Present	Off
	No Ink, Ink-Out Counter <10,000	On
30	No Ink, Ink-Out Counter >=10,000	Blink

Display element 46 is used to indicate that the tape supply has been exhausted.

		Element
	<u>Tape Status</u>	<u>46</u>
40	Tape Present	Off
	Tape Supply Exhausted	On

45 The same display 40 is conveniently used to indicate the presence of jams, and the location of a jam. Display elements 43, 55 and 58 are used to indicate faults such as the location of a jammed mail piece in the system, or a mail piece left in the transport after an emergency stop.

Element 43 will be on if and only if there is such a fault involving a piece in the mail piece singulation area of the feeder module. Element 55 will be on if and only if there is a piece in the integrated module transport area. Element 58 will be on if and only if there is a piece in the sealer area of the sealer module transport.

50 Display elements 55 and 58 are also used to indicate the location of a jammed tape in the system. Element 58 will be on if and only if there is a tape jam in the cutter or exit/moistener area. Element 55 will be on if and only if there is a tape jam in any area other than the cutter or exit/moistener area.

Display element 52 is used to indicate to the user that the power stacker is full. It will be on if and only if the system detects that the power stacker is full. If no power stacker is installed, this indicator will be off.

55 It will be noted that the keys 101-105 are respectively approximately vertically aligned with the part of the displayed machine representation which is associated with and controlled by that particular key. Thus, the feeder key 101 is adjacent the feeder end of the machine display, and the stacker key 105 is adjacent the opposite power stacker end of the machine, and so on. The display is always on when the machine is running, and

the lighted display thus indicating the current state of the machine is thus also always on.

Fig. 4 illustrates the meter mimic display 70 which pictorially represents the layout and informational items that will currently be printed on each mail piece or tape. Below the display 70 are its control switches 106-110, in the form of button switches.

The variable print element buttons 106, 107 may have different meanings depending on the country of use and the meter installed. These assignments are controlled by language PROM parameters of the microcontroller. A table of possible assignments follows:

Configuration	Button 106	Button 107
1	Ad	Inscription
2	Multi-slogan	Ad
3	Disabled	Ad

Configuration 1 is typically used in the United States, and the others are typically used internationally. A typical ad could be "Buy U.S. Savings Bonds." Typical inscriptions could include "pre-Sort", or similar postal classification items. Fig. 10 provides a flow chart which illustrates the operation of each of these buttons.

Button 108 can be used to reset the meter date to the current system date. Fig. 11 provides a flow chart which illustrates the operation of this button.

Button 109 can be used to select the date duck mode. Fig. 12 provides a flow chart which illustrates the operation of this button.

Button 110 can be used to advance the system's logical date (and meter date). Fig. 13 provides a flow chart which illustrates the operation of this button.

Many of the display elements in the meter mimicing display 70 are actually multi-segement displays used to display alphabetic and/or numeric information. In this case, for the purpose of this description, "element" shall be interpreted as the entire multi-segment display. The display is usually continuously on; however, all the elements in this display will be off if any of the following conditions apply:

- A meter is not currently installed;
- A meter is installed, but is locked;
- The meter is disabled due to other settings on the machine (e.g. "Seal Only mode" or a non-meterable rating class).

Indicators 53, 54, 77 and 78 are associated with the meter's variable print elements (ad, inscription and multi-slogan). Indicators 53 and 78 are associated with button 106, and indicators 54 and 77 are associated with button 107. Display elements 53 and 78 will be on if and only if button 106 is enabled. Display elements 54 and 77 will be on if and only if button 107 is enabled. There is no configuration in which button 107 is disabled in this example. If button 106 is enabled, 53 will display the current selection for the variable print element to which it corresponds. The selections will be displayed as alphabetic characters (A,B,C,D). If button 106 is disabled, elements 53 and 78 will be off.

If button 107 is enabled, element 54 will display the current selection for the variable print element to which it corresponds. The selections will be displayed as alphabetic characters (A,B,C,D). If button 107 is disabled, elements 54 and 77 will be off.

In this example, there is currently no way of automatically detecting whether or not the town circle 55 is actually ducked. The system relies on the user to change the town circle state when instructed. The town circle element 55 will be on at all times except when the language PROM indicates that the town circle must be ducked when the date is ducked, and the date is currently ducked.

Display elements 55, 57, 80, 71, 72, 73, 74, 75 and 76 are used to display the date currently set on the meter print wheels. The date may be displayed in any of the following configurations:

Configuration		Element Number							
	Number	76	75	74	56	73	72	57	71 80
5	1	A	A	A	On	D	D	On	Y Y
	2	Off	M	M	On	D	D	On	Y Y
10	3	Off	D	D	On	M	M	On	Y Y
	4	Off	Y	Y	On	M	M	On	D D

where 'A' indicates an alphabetic character (part of month name), and 'D', 'M', and 'Y' respectively indicate numeric characters which are part of the day, month and year number, respectively.

Items specified as 'MM' or 'DD' which are set to values less than 10 may be displayed with a zero in the "ten's" position. The date configuration is usually a language PROM parameter. If the entire date is ducked, all date elements will be displayed as dashes. If only the day is ducked, the elements assigned as 'DD' (based on the date display configuration) will be displayed as dashes.

The postage amount display elements 59, 60, 61, 63, 64, 65, 66, 67 and 68 will display the postage amount currently set on the meter print wheels. The meter unit configuration information determines which elements are active, according to the following table:

	# of Settable	# of Non-	# of Digits Active	Dec.	Active
	Banks	Settable	Right of	Pt. Element	Numeric
		Banks	Decimal		Elements
30	4	0	0	none	37...34
	4	0	1	31	37...34
35	4	0	2	30	37...34
	4	0	3	29	37...34
40	5	0	0	none	38...34
	5	0	1	31	38...34
45	5	0	2	30	38...34
	5	0	3	29	38...34
50	5	1	0	none	38...33
	5	1	2	31	38...33

Elements which are not active, according to the above table, will be off at all times.

The value displayed in elements 66, 67, 68 ... 64 will be aligned based on the decimal point element active, and will be displayed with leading zeros suppressed.

The Gebuhr Bezhalt element 58A will only be on when the meter which is installed contains a Gebuhr Bezhalt element and the Gebuhr Bezhalt element is in the print plane ("lowered").

The postage amount frame 52 will be on at all times, except when the entire display is blanked. The system can also provide a language PROM parameter which will serve to enable or disable the collection of elements which represent the indicia graphics (e.g. the "eagle" on Fig. 4, shown as element 69).

It will be appreciated that the control keys 101-110 can be hard-wired to their respective modules via suitable logic circuits implemented by programmable logic devices which are commercially available. However, since a microcontroller 13 is available in the machine, it is preferred to implement the necessary connections by way of software. Those skilled in the art will recognize that there are many ways to carry this out. One suitable way is indicated in the software flow charts illustrated in Figs. 5-13. The conventional notation is used, with boxes representing actions or functions to be performed, and diamonds representing possible branches to be taken dependent upon the condition interrogated. Each of the start states represent the current state of the machine. A conventional polling routine of the various buttons can be followed, or the system can be conventionally interrupt driven whenever a button is pressed. The flow charts will be self-evident to those skilled in this art, and comments will be provided below only where additional explanation is believed necessary.

Fig. 5 depicts the routine followed when the feeder button 101 is pressed by the user.

Fig. 6 depicts the routine followed when the sealer button 102 is pressed by the user. The toggle action is illustrated at blocks 115-118.

Fig. 7 depicts the routine followed when the WOW button 103 is pressed by the user.

Fig. 8 depicts the routine followed when the tape type button 104 is pressed by the user.

Fig. 9 depicts the routine followed when the stacker button 105 is pressed by the user.

Fig. 10 depicts the routine followed when either the ad button 106 or the inscription button 107 is pressed by the user. The conventional postage meter typically includes the printing mechanisms for the eagle 69, the postage value 62, the town circle, as well as an assortment of fixed ad and inscription printouts which can be selectively enabled for a particular batch of mail pieces. This is well known in the art and need not be described further.

Fig. 11 depicts the routine followed when the today button 108 is pressed by the user.

Fig. 12 depicts the routine followed when the date on/off button 109 is pressed.

Fig. 13 depicts the routine followed when the +day button 110 is pressed by the user.

Fig. 14 illustrates one form of interface between several LEDs 120-122 representing the display regions (for example, 41, 42) that are illustrated to indicate the state or conditions of the labelled item. They are driven by commands from the microcontroller 13 via a driver 123. Elements 125-128 represent the button key switches 101-110, which when activated initiate a program routine as described above. Only the meter print display 70 is shown which, like the machine display 40, is driven on commands from the microcontroller 13 via a display driver 130. The operation is evident from the description given above.

The warning initiators, such as JAM 122 and ADD WATER 121, are activated by commands from the microcontroller, which is generally hard-wired to sensors mounted in the machine 11 and which are positioned to detect a particular condition and input an interrupt signal to the microcontroller. Its implementation is straightforward.

Summarizing, the display 40 constantly displays a pictorial representation of the actual current machine configuration with lit regions located adjacent the corresponding parts of the display to instantly show the current physical state of the machine. The control switches are located adjacent the displayed machine part or module which it controls, permitting the user to control the machine's configuration modes and instantly see the results.

The meter print display 70 is a graphical representation of the meter imprint that will be currently generated on the next mail piece or tape. Again, the control switches are located adjacent their respective controllable item.

These novel constant displays while the machine is in use provides immediate feedback to the user of the current state of the machine, greatly facilitates its use and re-configuration when desired, as well as providing warnings of malfunctions or replenishment of supplies. It avoids the need for the user to remember choices required to operate the machine, and will reduce runtime errors. It will be understood that, while the location of the controls below their respective display is preferred, other arrangements which visually map the control to the relevant machine component or print item will also be suitable. While the invention is particularly applicable to a complex mail-handling machine or postage meter, it will be evident that it can also be applied to other complex machines, especially intended for operation by unskilled or semi-skilled users.

While the invention has been described in connection with preferred embodiments, it will be understood that modifications thereof within the principles outlined above will be evident to those skilled in the art and thus the invention is not limited to the preferred embodiments but is intended to encompass such modifications.

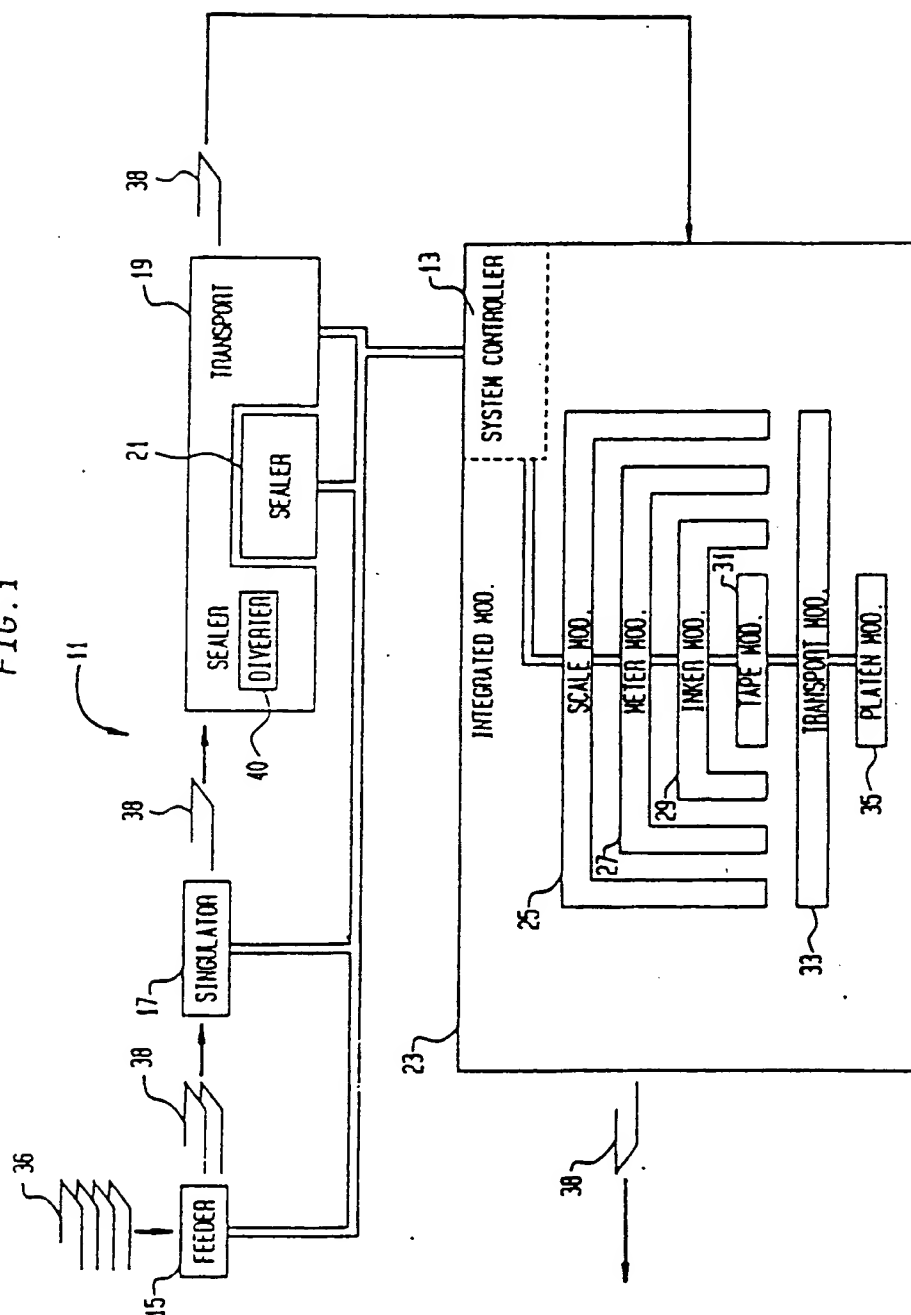
## Claims

1. A machine having a given configuration, comprising a control panel housing plural switches connected to the machine for placing the machine into one of a plurality of states, a display substantially mimicing the machine configuration, means for indicating on the display the machine state established upon activation of a switch.
2. The machine of claim 1, further comprising plural modules connected to the plural switches for selective activation and deactivation by the switches, said display indicating the relative position of the modules in the machine configuration.
3. The machine of claim 2, wherein each of the switches is located on the control panel in substantial alignment with the module representation it can activate and deactivate.
4. The machine of claim 3, wherein the switches are momentary cyclical switches.
5. A mail-handling machine comprising a plurality of mail-processing modules and operable in a plurality of different user-selectable modes wherein different combinations of modules are activated in response to a control signal generated when a user selects one of the plurality of operating modes, characterised by:-
  - a) a display substantially mimicing the actual arrangement within the machine of the mail-processing modules,
  - b) a control panel for selecting a mode or module,
  - c) means for indicating on the display when a module has been activated.
6. The machine of claim 5, wherein the panel further comprises a plurality of switches, at least one of said switches being connected to activate and deactivate one of the modules, at least another of said switches connected to select an operating mode of one of said modules.
7. The machine of claim 6, wherein the switches are located on the panel in substantial alignment with the module it controls as depicted on the display.
8. The machine of claim 5, 6 or 7 further comprising indicators on the display and connected to the control panel for indicating the current state of the machine.
9. The machine of claim 8 wherein the current state of the machine includes a system fault condition.
10. The machine of any of claims 5-9 wherein the machine includes a feeder module, a sealer module, a meter module, a tape module and a stacker module, and the panel comprises a switch connected to each of the said modules for controlling same.
11. A postage meter machine comprising means for printing on a mail piece postage indicia and a plurality of additional informational items in a predetermined layout on the mail piece, a display mimicing the print layout on the mail piece, and a plurality of user-operated switches connected to the printing means for selectively printing one or more of the additional informational items, said switches being located on the machines in positions substantially aligned with the informational item on the display whose printing it controls.
12. The machine of claim 11, wherein the informational items include a plurality of ads, one of a plurality of classification inscriptions, a date, and a town circle.
13. The machine of claim 11 or 12 further comprising indicators on the display and connected to the switches for indicating the current state of the print layout.
14. A mail-handling machine comprising a plurality of mail-processing modules and operable in a plurality of different user-selectable modes wherein different combinations of modules are activated in response to a control signal generated when a user selects one of the plurality of operating modes, characterised by:-
  - a) a first display substantially mimicing the actual arrangement within the machine of the mail-processing modules,

- b) a first control panel for selecting a mode or module,
- c) means for indicating on the first display when a module has been activated,
- d) one of said modules comprising a postage meter having means for printing on a mail piece or tape postage indicia and a plurality of additional informational items in a predetermined layout,
- 5 e) a second display mimicing the print layout on the mail piece or tape,
- f) a second control panel connected to the printing means,
- g) means for indicating on the second display the current state of the printing means.

15. The machine of claim 14, further comprising a plurality of user-operated switches connected to the modules for selectively activating a module and selectively printing one or more of the additional informational items, said switches being located on the machines in positions substantially aligned with the module or informational item on the display which it or whose printing it controls.

FIG. 1



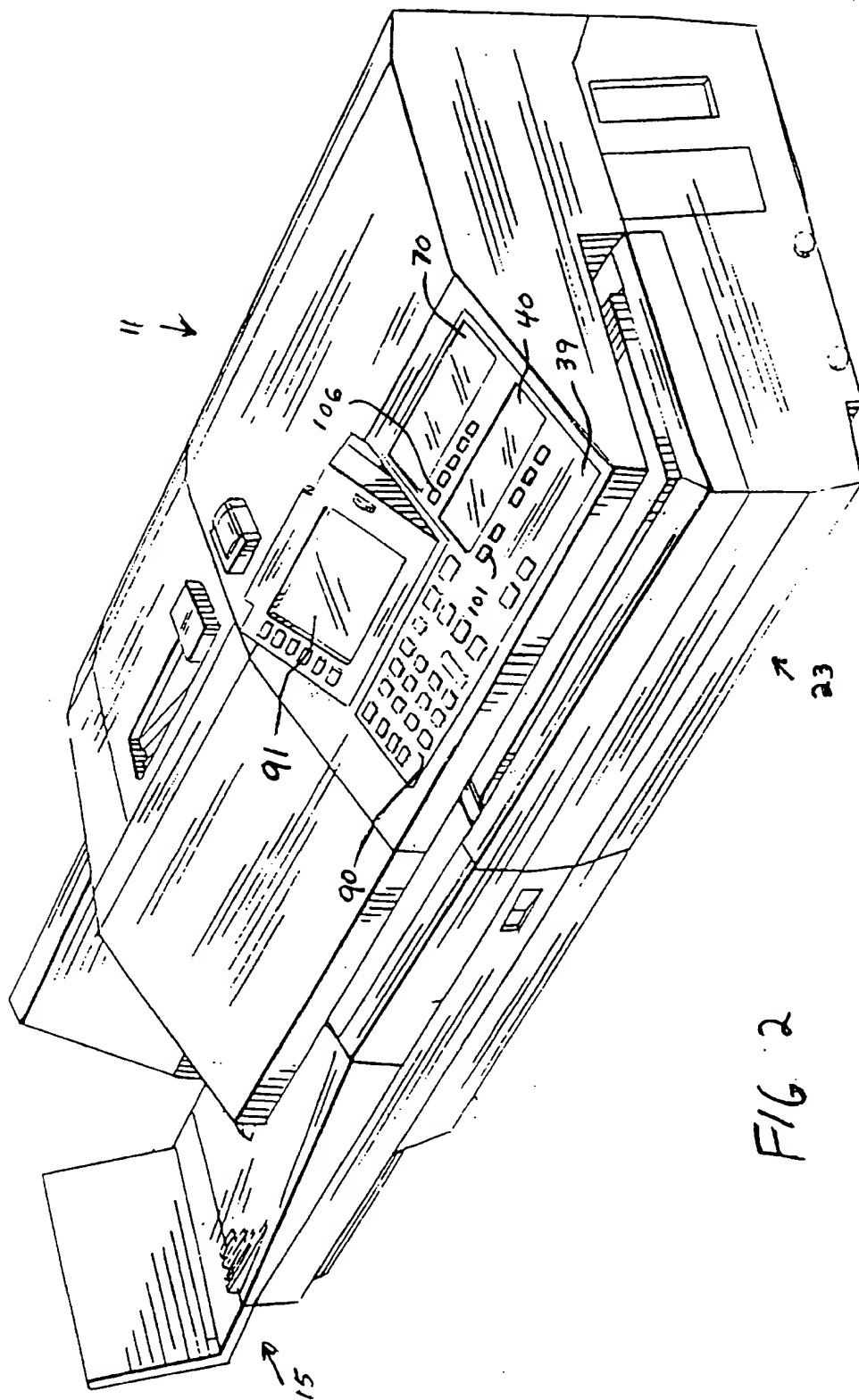


FIG. 2

FIG. 3

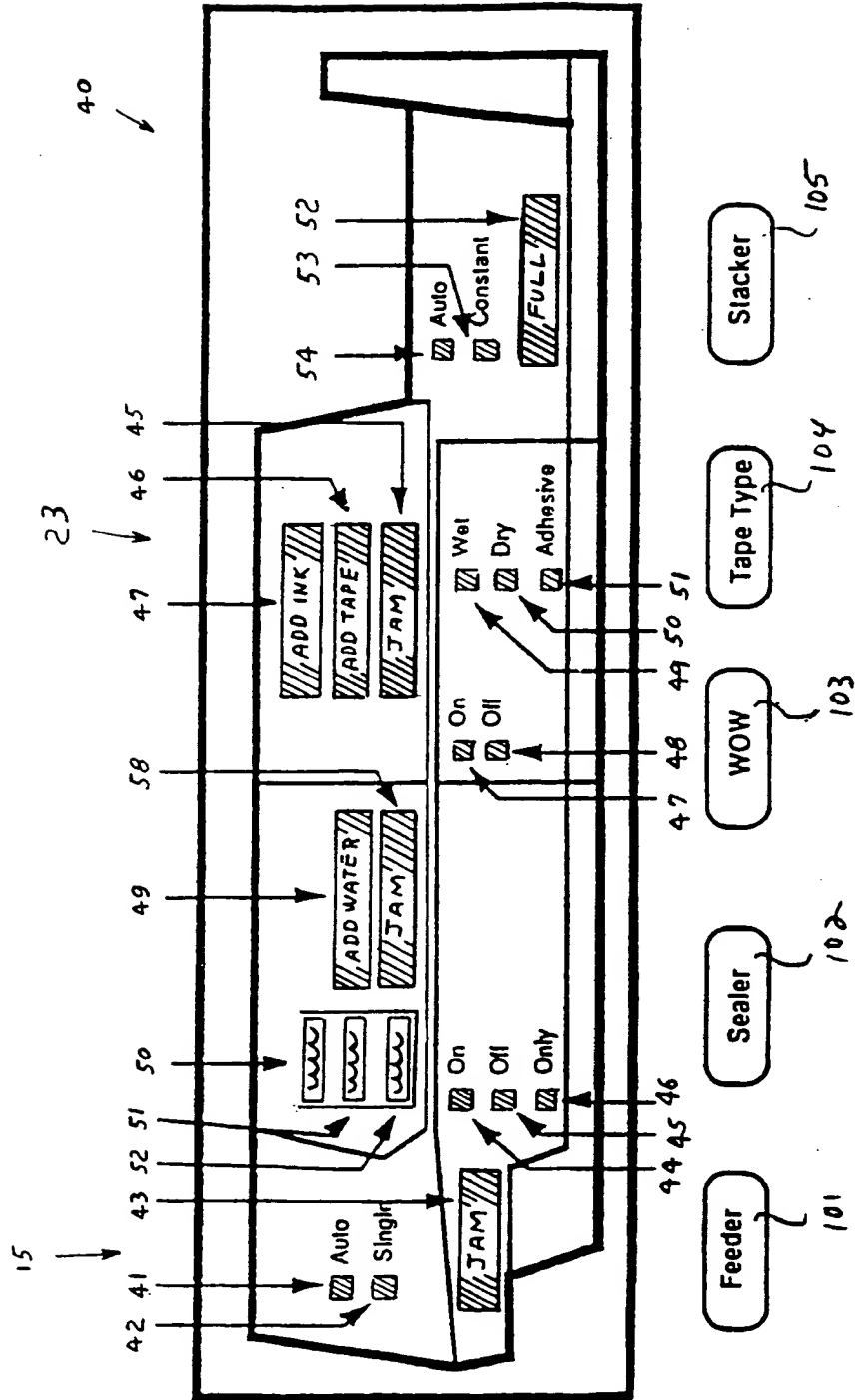


FIG. 4

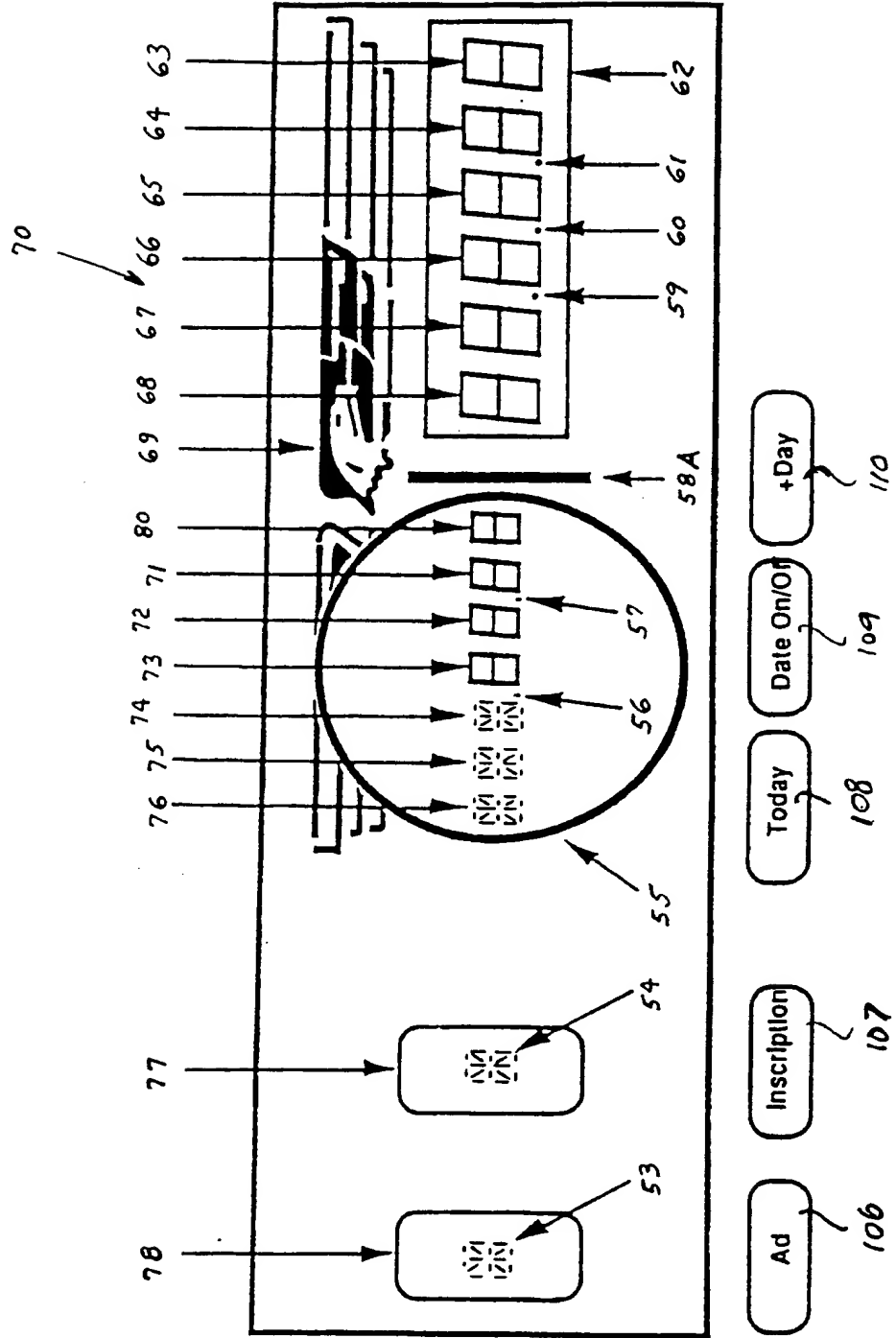


FIG. 5

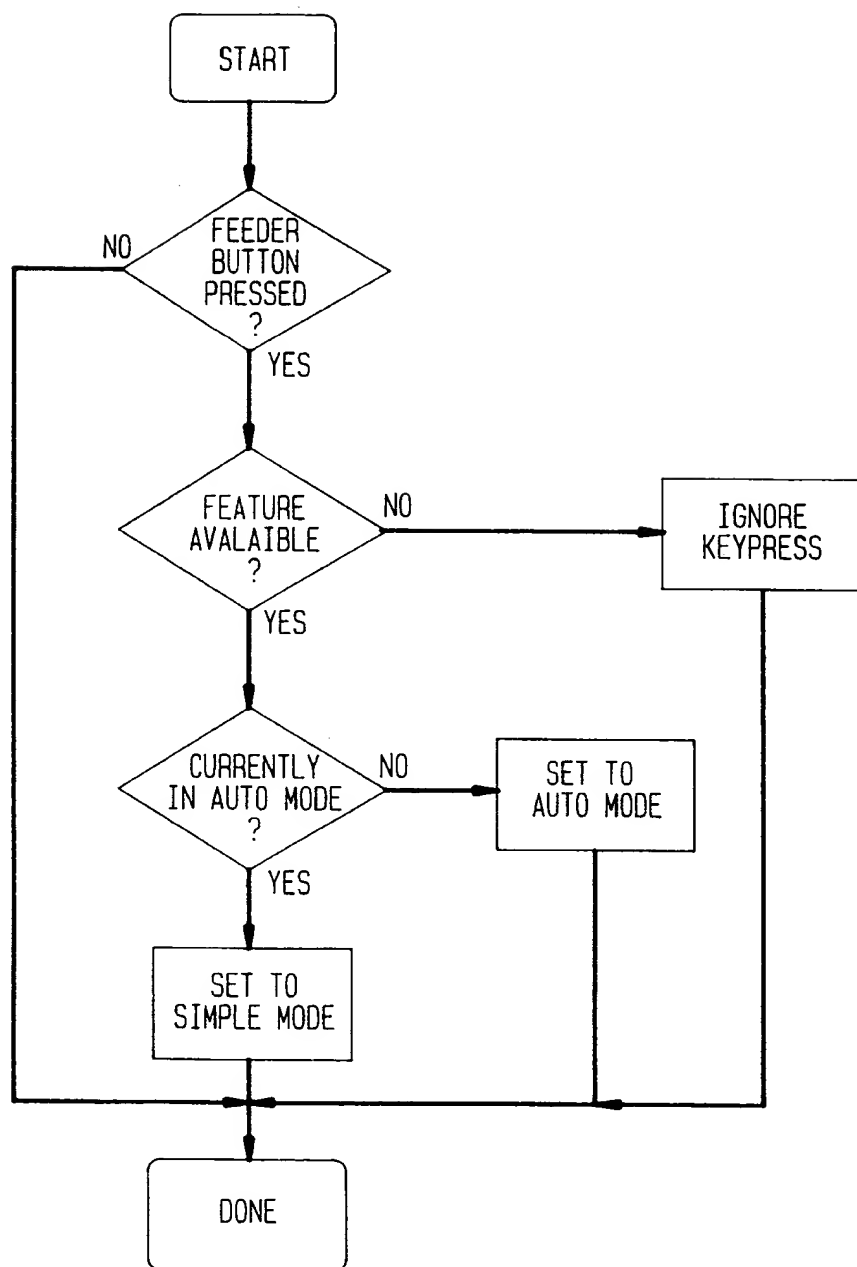


FIG. 6

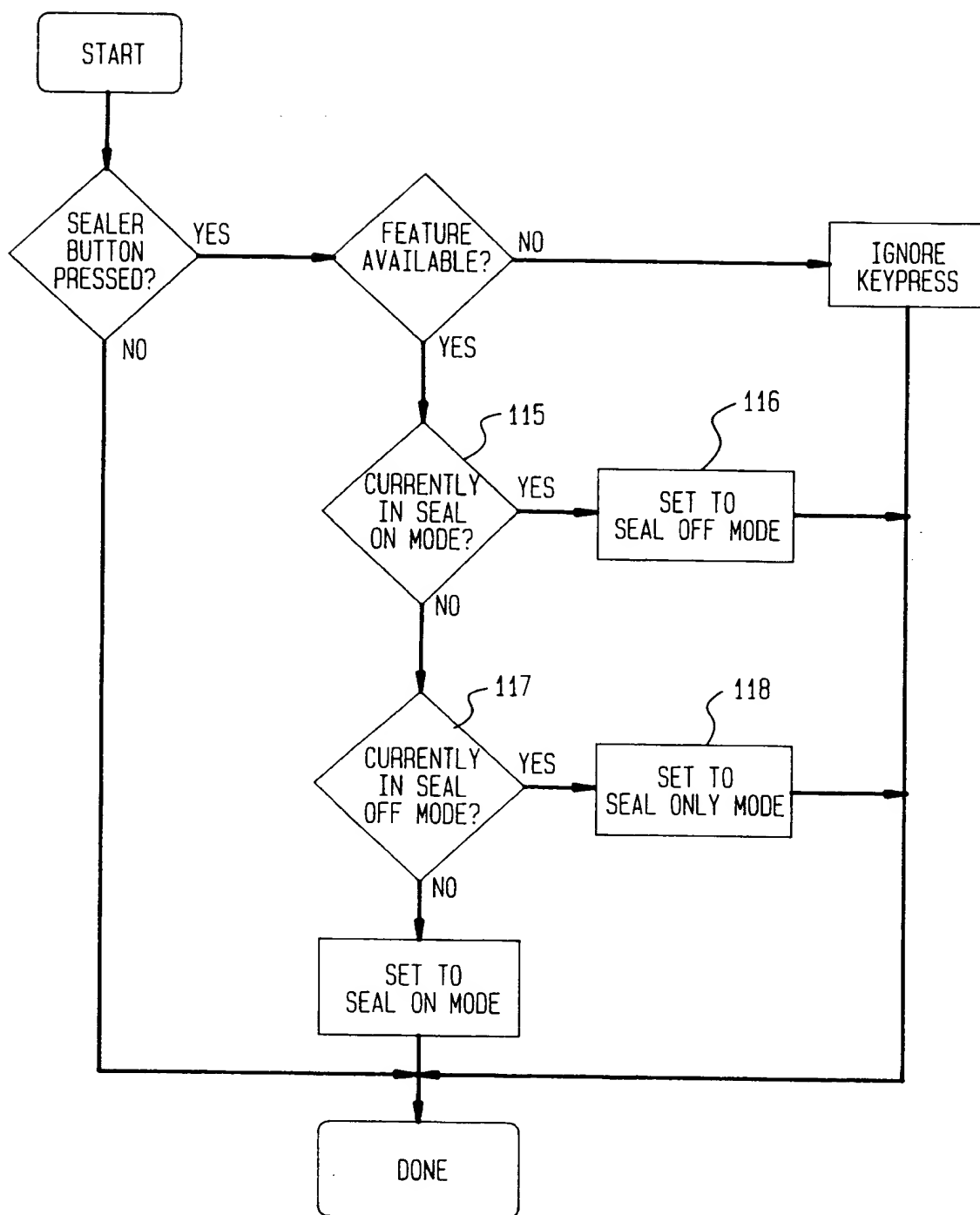


FIG. 7

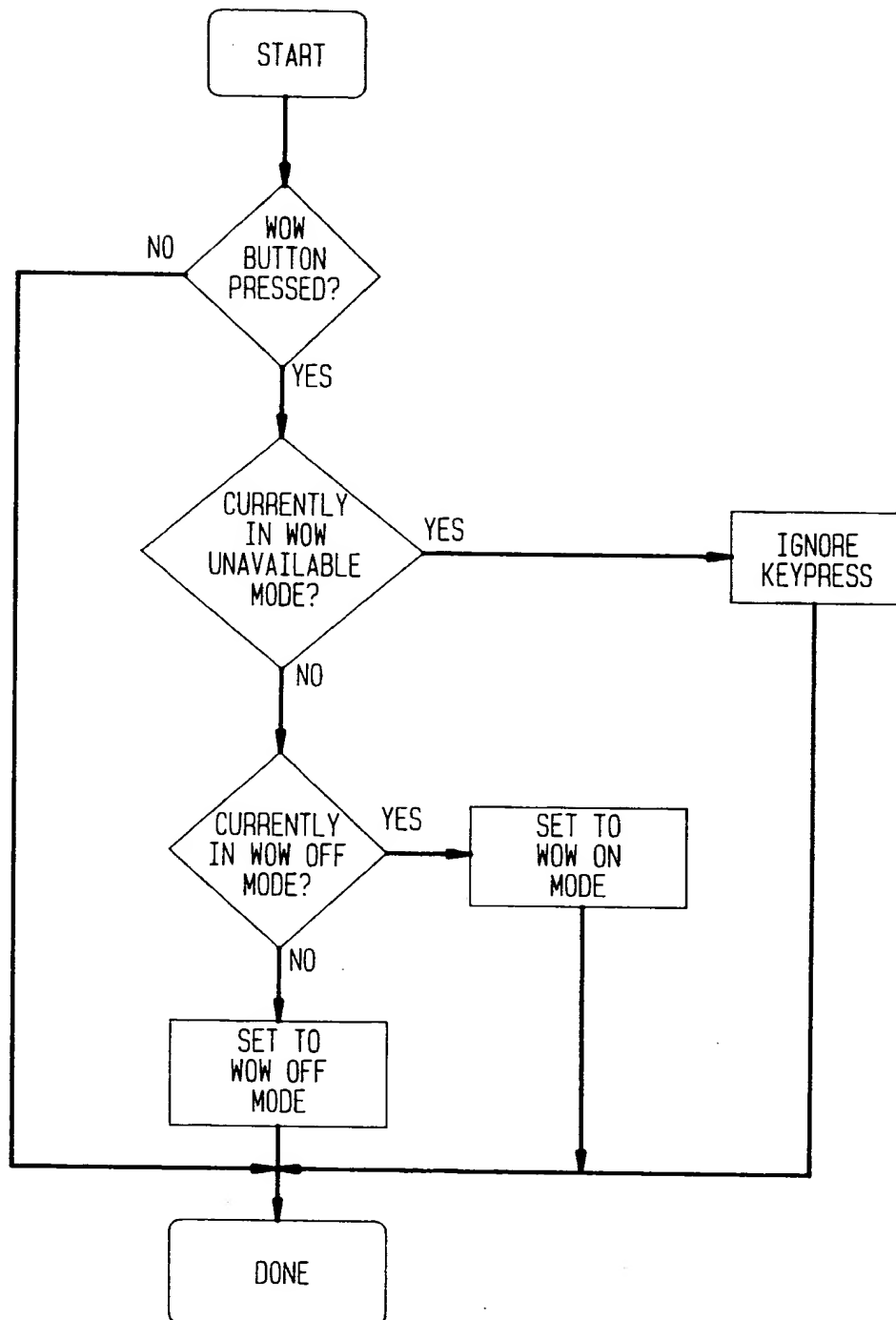


FIG. 8

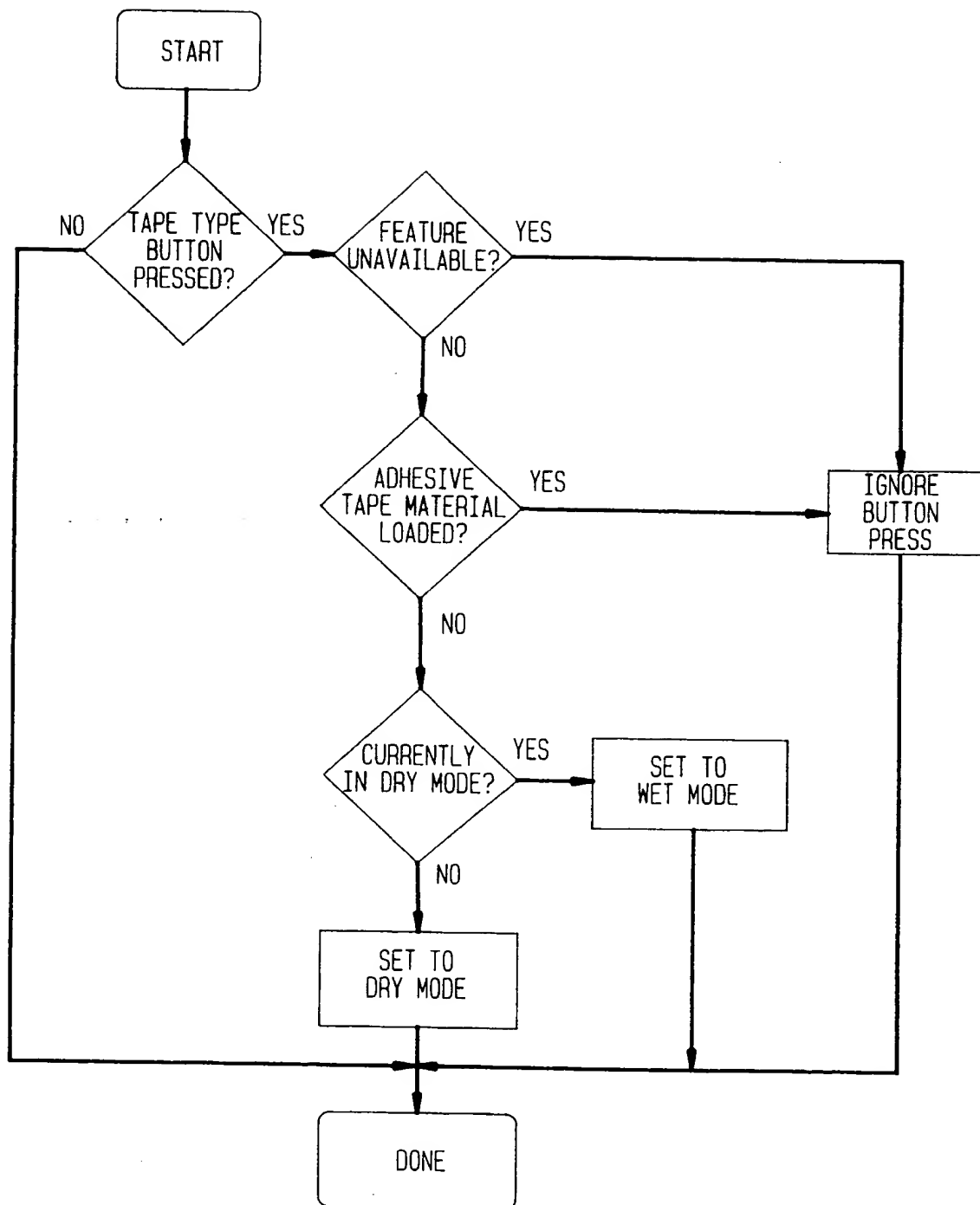


FIG. 9

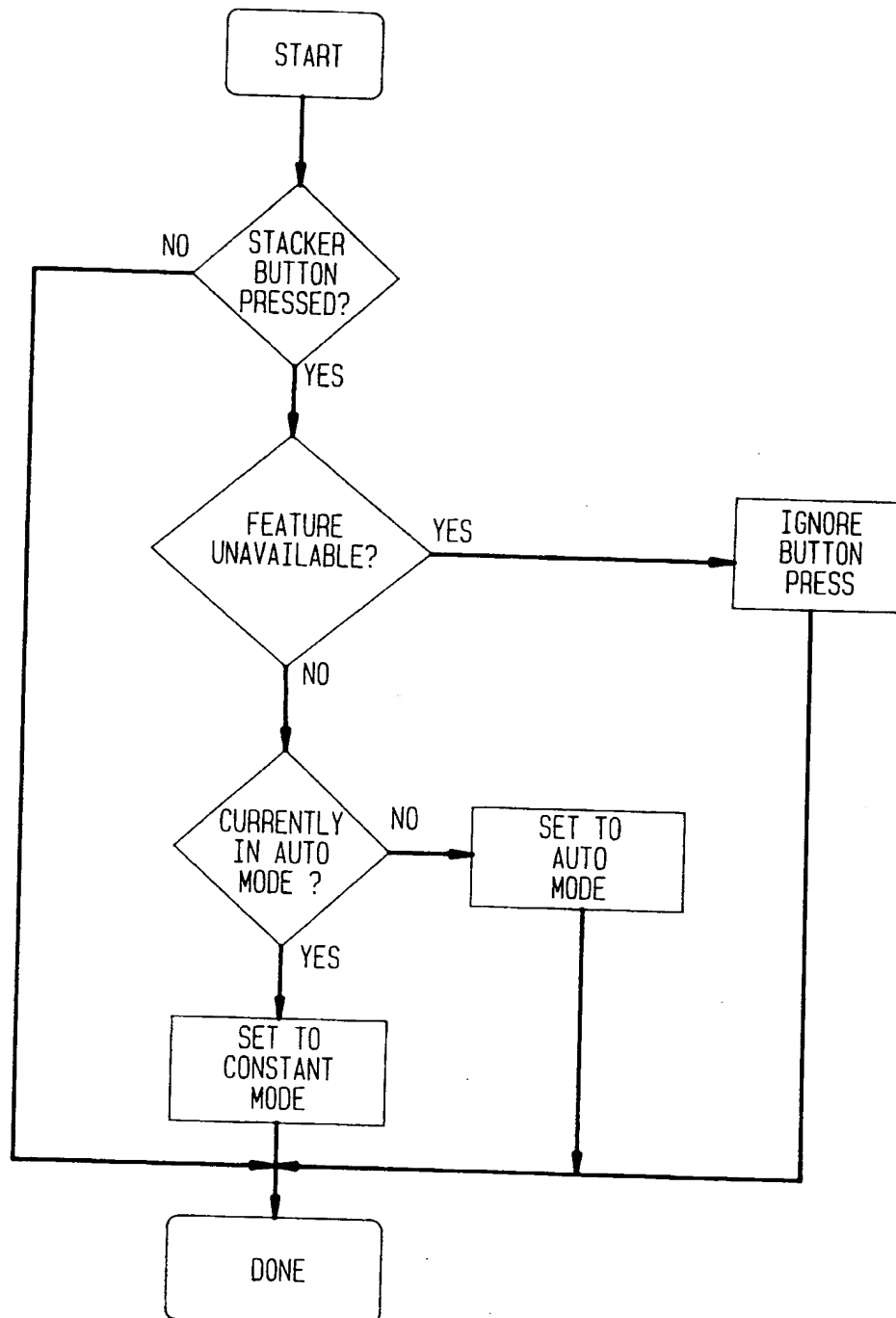


FIG. 10

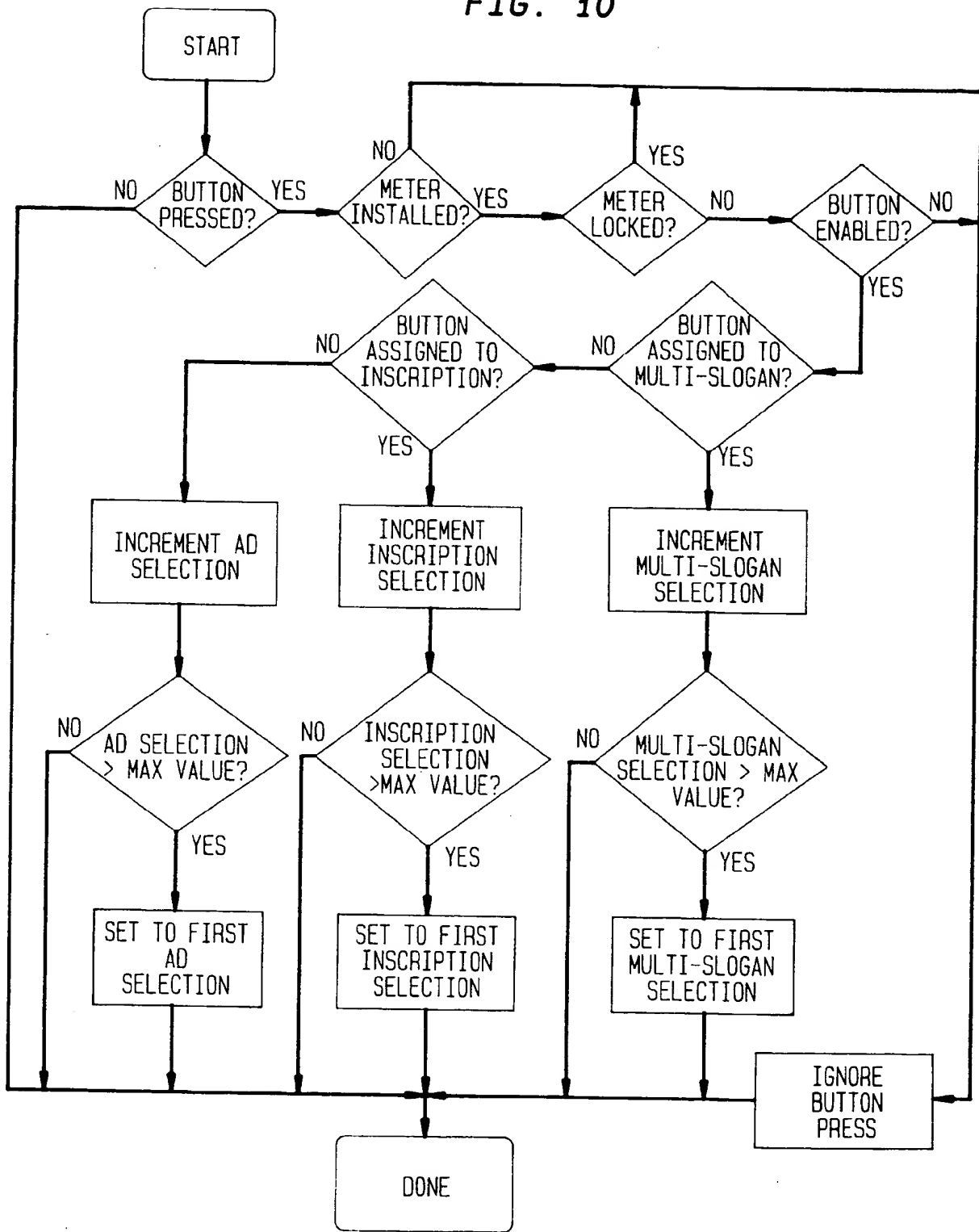


FIG. 11

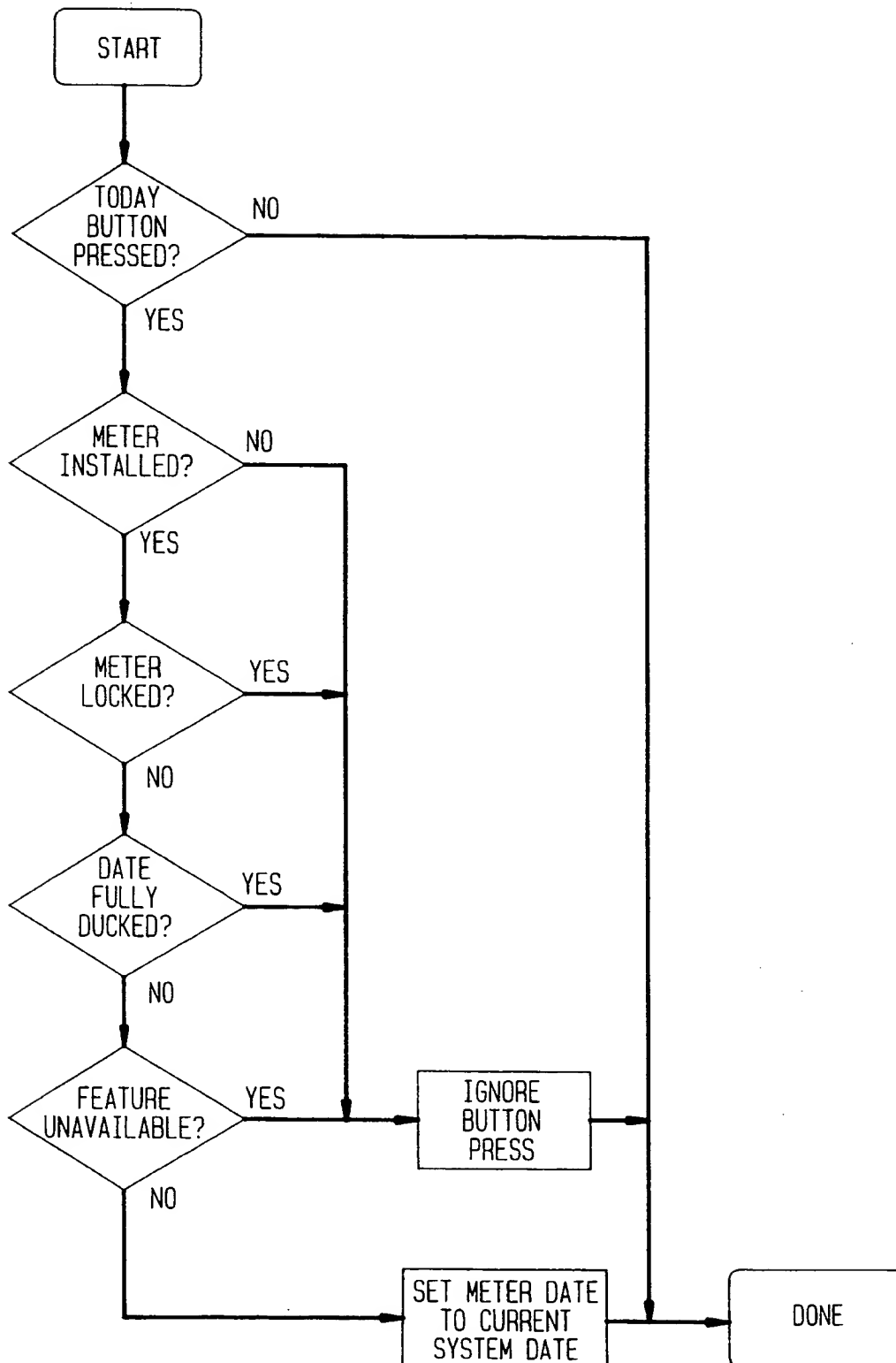
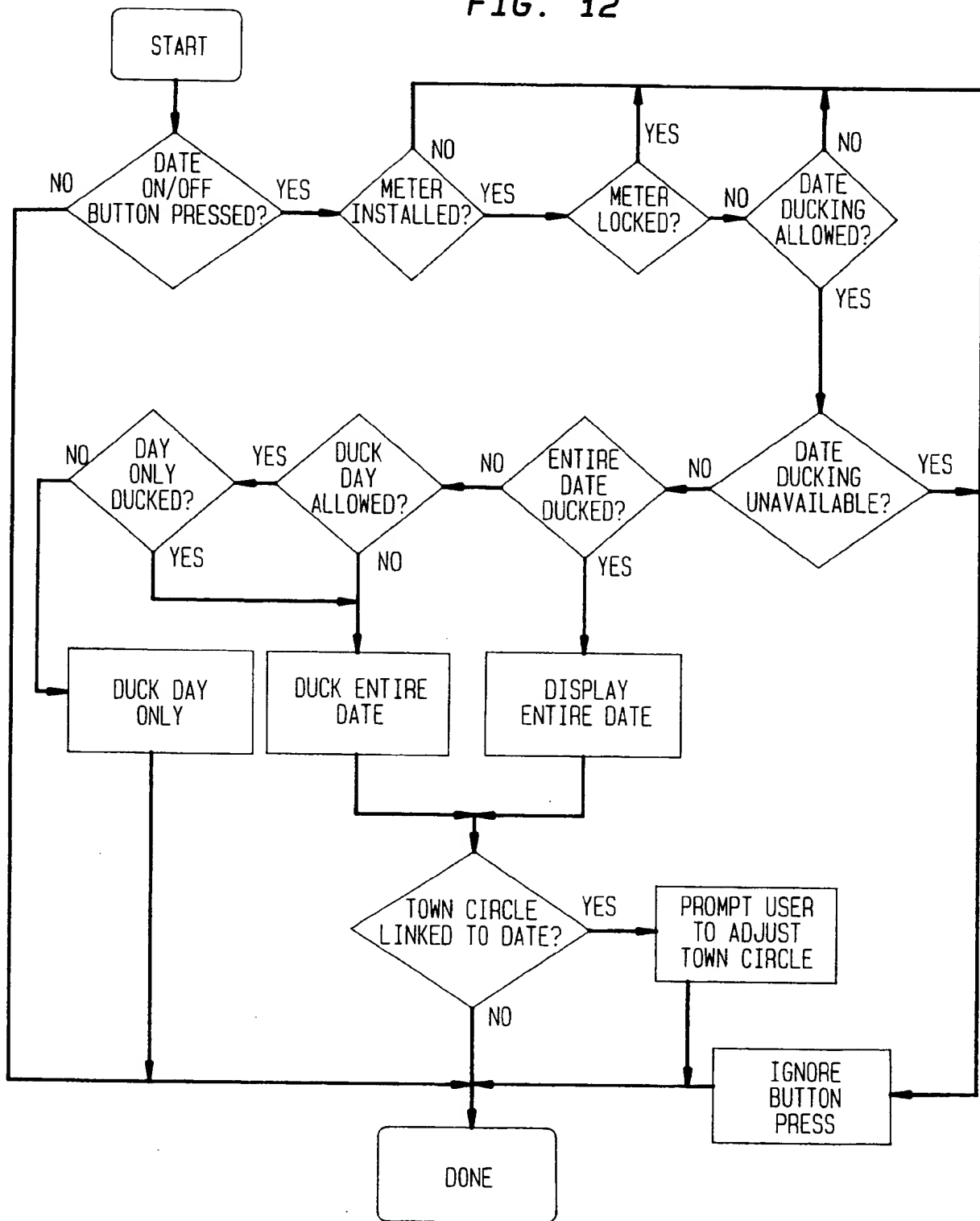
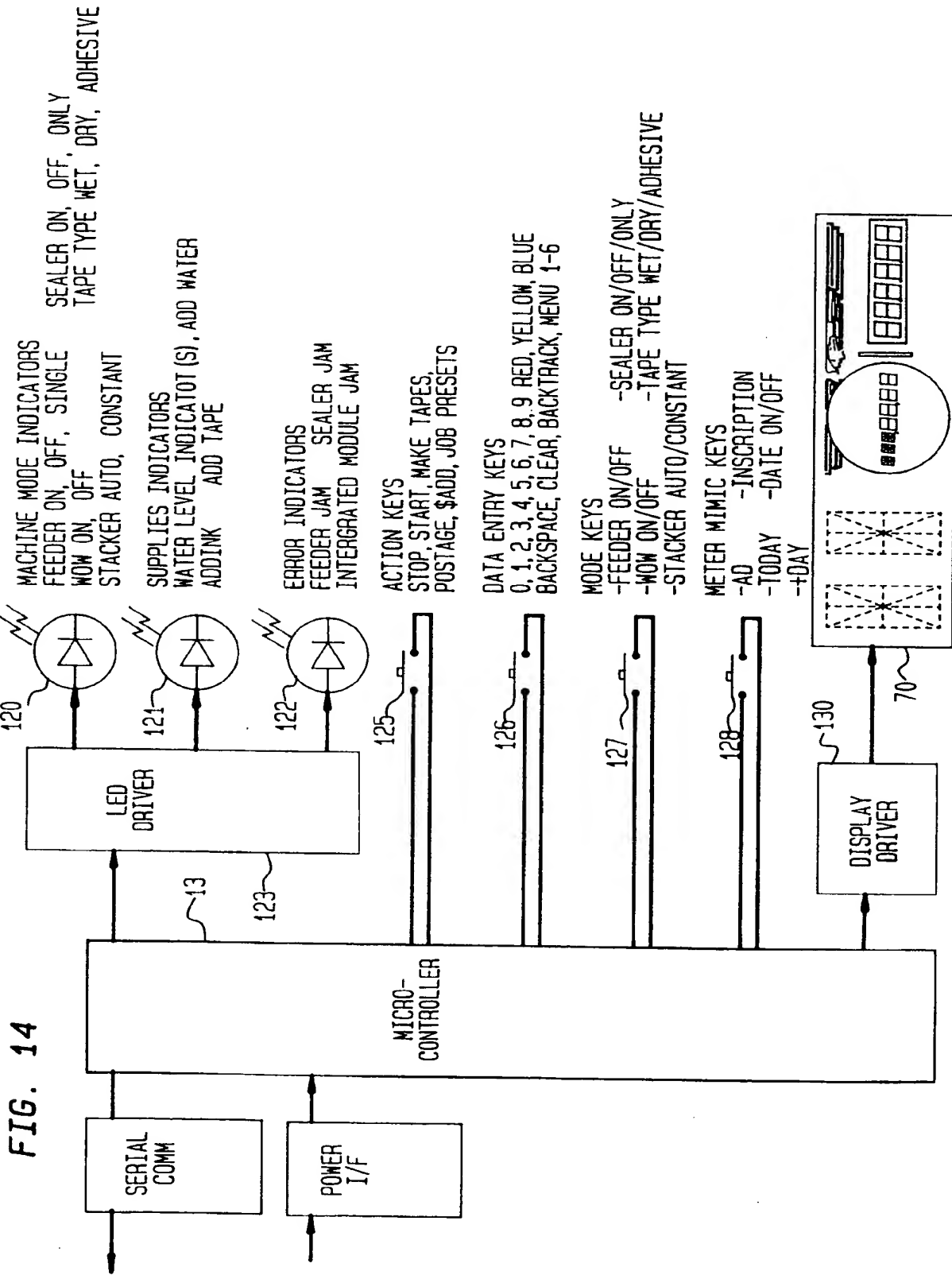


FIG. 12







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